DOCUMENT RESUME

ED 187 245 HE 012 714

AUTHOR Virasai, Banphot, Ed.
TITLE Development of Higher Education in Southeast Asia: Challenges for Tomorrow.
INSTITUTION Regional Inst. of Higher Education and Development, Singapore.
PUB DATE 77
NOTE 54p.; For related document see HE 012 642
AVAILABLE FROM Regional Institute of Higher Education and Development, 15 Grange Rd., Singapore 0923, Republic of Singapore ($5.00)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Accountability; Adult Education; Career Education; College Administration; *College Role; Educational Change; *Educational Development; Educational History; Educational Objectives; Educational Opportunities; Educational Philosophy; Educational Radio; Educational Technology; Educational Television; *Foreign Countries; *Futures (of Society); Government School Relationship; *Higher Education; Management Systems; Programed Instruction; Research Projects; School Community Relationship; Teaching Methods; Trend Analysis
IDENTIFIERS *Asia (Southeast)

ABSTRACT

Five articles on the development of higher education in Southeast Asia are presented. In "Philosophy and Objectives for Higher Education in Southeast Asia," William B. Relf discusses the historical background of education in Southeast Asia, three general purposes for a university, education and national development, future needs, recommendations concerning educational planning, learning and teaching methods, educating for employment, and adult education. In "New Approaches to Teaching and Learning in Higher Education," Chai Hon-Chan considers pressure for change in higher education in Southeast Asia, the need to establish course objectives, incentives and rewards for teachers, and possibilities and problems of instructional radio, instructional television, programmed instruction, and future prospects for new approaches. In "University Research and Service to Society in the Southeast Asian Context," Niphon Kantasewi considers future needs for research in Southeast Asia, responsibilities in research, research in natural science and technology, the social sciences and related fields, the humanities, and the university role in assisting the public to solve problems. In "Innovations in the Management of Higher Education in Asia," Victor M. Ordonez discusses the concern for accountability, the adoption of management technologies and budgetary mechanisms, the greater utilization of professionally prepared administrators, and the growing interdependence among subsectors of higher education. (SW)

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DEVELOPMENT OF HIGHER EDUCATION IN SOUTHEAST ASIA: CHALLENGES FOR TOMORROW

Banphot Virasai
Editor

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DEVELOPMENT OF HIGHER EDUCATION IN SOUTHEAST ASIA: CHALLENGES FOR TOMORROW

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1977

3 MAY 1 1980

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CSSDI Building
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Printed in Singapore by Times Printers

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PREFACE

This small volume was planned a few years ago. Due to certain circumstances the volume was not ready for publication until recently. The contributions of Dr. Relf, Dr. Chai and Dr. Niphon were written in 1975. The essay by Dr. Ordonez is more current.

Even though the contributions were completed at different times they provide useful insights into the problems and prospects of higher education in Southeast Asian countries. As some of the essays were written before 1977 the presentations reflect the perspectives at the time of writing.

The volume represents the interest of the Institute in the dual domain of higher education and development. The Institute, founded in 1970, has a twofold purpose, i.e. "to stimulate and facilitate cooperation among the universities and the Governments of the countries in Southeast Asia" and "to enhance the contributions of higher education to the social and economic development of the countries of the region and of the region as a whole".

It is hoped that this book, albeit small, may contribute in some small measures toward that twin goal.

PART 1

PHILOSOPHY AND OBJECTIVES FOR HIGHER EDUCATION IN SOUTHEAST ASIA

William B. Relf*

HISTORICAL BACKGROUND

In the broadest sense, education begins at birth and continues as long as the mind functions. In both the animal world and the world of humans, parents have educated their young from primitive times until today. As man's societies became more complex, states developed formal structures of education.

The formal structure of education in Southeast Asia appears to be a blend of three traditional forms of education: (1) rote memorization of imported knowledge; (2) liberal arts of the western world; (3) job preparation. Each tradition developed from specific needs as envisaged by the leaders of the time. A brief look at these traditions is useful.

In China in 165 B.C. an imperial decree set up competitive examinations for the recruitment of civil service personnel. As getting a job in the civil service depended upon the examinations scores, applicants were concerned less with learning about their world than with memorizing information which would help them on the examination. This was consistent with a Confucian society in which education concentrated on the ancient classics, in which the educated man learned of the world by studying passages from the ancient book of history (Shu King), and by adopting specific social principles which defined the relations among men and among states.

The vision is of "an eternal political order, made up of a hierarchy of educated elites, where, though dynastic changes do occur whenever the ruling house loses touch with the right principles, its downfall will be followed by the establishment of another Confucian monarchy. No alternative social or governmental system is conceived. There is little incentive for technological innovations because these would not help in one's Confucian status, the only source of legitimacy, morality, and profit. History was merely a record of dynastic changes, in which individual exploits were described in minutest detail. But there was neither a philosophy of history nor an attempt at analyzing human development in terms of stages."[1]

To this philosophy of education should be added the task of memorizing 30,000 Chinese characters. In the light of the above it can be readily seen how rote memorization has played a key role in the Chinese educational systems of the past.

The Western system of education has a different tradition. The formal education of Ancient Greece was designed to impart military and civic

* Dr. William B. Relf: Former Associate Professor of Industrial and Business Management, Nanyang University, Singapore, Professor at La Verne College, California, U.S.A.

[1] Akira Iriye, *Across the Pacific* (Harcourt Brace: New York, 1967), p. 8.

virtues. Later, during the Roman Empire, concern for the "civilized life" enhanced the value of education for the ruling classes. After the collapse of the Roman Empire, monks preserved learning until the time of Charlemagne in the eighth century, when they founded monastic schools and taught the seven "liberal arts" of grammar; rhetoric; logic; arithmetic; geometry; music; and astronomy. From the liberal arts tradition of these monastic schools came the "Schoolmen" of the Scholastic Movement, which concerned itself with theology and philosophy as well as the seven liberal arts. This movement led to the founding of universities in the eleventh to thirteenth centuries in Paris, Bologna, Padua, Oxford, and Cambridge. Contrary to the Confucian system which provided mostly answers, the European universities were centres of intellectual ferment and debate, raising questions.

This liberal arts tradition has been modified over the centuries. New Christian denominations followed the Protestant Reformation with intensified efforts at education, feeling that only a literate person could read the Bible and only an educated person could understand it.

The development of democracies in the nineteenth century led to the need for educating a broader spectrum of the citizenry. If common people were to have a voice in matters formerly the preserve of the elites, then the common people had to be sufficiently educated to make intelligent decisions. Equality of opportunity as an ideal could not become a practicality to an uneducated man. In societies which prided themselves on their diversity and individualism, the liberal arts education was extended to enable each individual to develop most fully his unique interests and abilities.

Then as increasing attention was given to developing the society, as business, government, and other institutions became larger, the university was seen as a source of leaders. Still, the liberal arts tradition remained of value, for leaders were sought who had sufficient breadth of outlook to deal with problems of society which overlapped many specialized areas. Today a leading American educator states that, "My own view of education has always been that schools and colleges exist to give leadership to social, cultural, and political change. It is the duty of the university to do something about the quality of life in the large community, starting with the life in its own community."[2]

In addition to the rote memorization and liberal arts traditional forms of education, the tradition of job preparation has had an impact on the Southeast Asian education system. The industrial revolution created a need for educated workers who could read, do simple mathematics, and follow written instructions. Factories educated child workers at first, and later, universal elementary education followed. Once the principle of universal education at the lower levels was accepted, the idea of higher education for all capable of benefiting from it followed, especially as technological advances created the need for technically trained people in industry, science, and medicine.

[2]Harold Taylor, "Colleges Exist to Give Leaderships for Change," *College and University Business*, September, 1971, p. 50.

In developed societies, the impact of science and technology and the increase of scientific and technical knowledge have been so great, that the liberal arts portion of the university curriculum has been diminished. Some educationists express dismay over the increasing stress on scientific and technological content to the neglect of the liberal arts, fearing a decline in the general intelligence of students. They fear that narrowly educated specialists are likely to lose sight of the broader goals of society and neglect the impact of their discipline upon other parts of society and upon people. Other educators believe that one must have a solid knowledge of science and technology in order to understand the world about him. First an industrial revolution and then a scientific revolution profoundly influenced the systems of higher education in the Western world. Both the needs of society and the needs of students for job-oriented knowledge have had major impact.

A SENSE OF PURPOSE

As discussed above, the existing systems of higher education in Southeast Asia have their roots in history. Educational systems were created to meet the needs of their societies. As societies change, their needs change, and so must the educational systems. In fact, in an ideal sense, the universities should be anticipating the changes and acting ahead of the society, rather than reacting to societies' changes. The university student is preparing not for society as it was but for society as it will be. His thirty or forty years of working life will be lived in the future.

However, even in preparing for the future, individuals and institutions need some roots for stability, just as the tree, growing toward the sun, depends upon its roots for support during stormy weather. Branches can be lost and replaced without seriously harming the tree, but the loss of the root system kills the tree.

One important root system for a university is its sense of purpose. After all, when people of a nation spend large sums of money on education, and educators devote their lives to teaching and learning, there should be worthy and important purposes.

There are three broad general purposes for a university, all equally important. The first purpose is to develop the person, to help each individual to become the best person he is capable of becoming, to discover and develop his talents. The full development of the person includes the formation of constructive and admirable values and attitudes which will guide him through life: attitudes toward himself and others; attitudes toward work and social responsibilities; attitudes toward truth and goodness.

As traditional values fall in developing countries, values of Western industrial societies become popular. But these new values may not be the best ones for the nations. What attitudes and values are best? What are the universities doing to encourage students to examine their values, to promote the kind of intelligent, responsible discussion and debate from which new, worthwhile attitudes and values emerge?

The second purpose of the university is to supply the nation with skilled and talented personnel for agricultural and industrial growth, social services, cultural and artistic advancement, education, and public administration. University graduates are the leaders of tomorrow for the society. The better their preparation, the brighter the future of the nation becomes. But their preparation must match society's needs. Tropical countries need doctors knowledgeable about tropical diseases, agricultural nations need agronomists, etc. What are the universities doing to forecast the needs of tomorrow? Do the curriculum and staff specialties reflect these needs?

The third purpose is to acquaint the student with man's place on spaceship earth, his evolution and history. Additionally, the history and traditions of the peoples of the nation, and of the nation itself, should be taught. A delicate balance must be maintained in pursuing this purpose. On the one hand, a university forced by the government to conform rigidly to the ideologies and political goals of its leaders becomes an institution of indoctrination rather than one of education. On the other hand, as a servant of its society, the university is derelict in its duty if it does not aid in fostering cohesiveness and a sense of community in the society. In this difficult and controversial area the university must labour to encourage an appreciation and respect for different traditions, while finding avenues of unity and mutual respect for the citizens. There should be support of the society without sycophancy, and dissent without destruction.

EDUCATION AND NATIONAL DEVELOPMENT

Economic growth represents only a part of national development. Development in its fullest extent concerns itself with the full welfare of man. It is a dynamic, changing process, which follows different courses for different societies.

There has been a tendency to evolve theories of development by using an advanced country as a model. The scholar investigates this country's stages of development via historical, social, and economic analyses, and then tries to fit one of the stages on the less advanced country. The policies followed by the advanced country during this stage of its development are superimposed upon the less advanced country. This system possesses a degree of effectiveness and may achieve limited short-run results. But in the long run, each country will have to develop its own special way in the world, with its own goals and objectives.

In a way, Southeast Asian universities have followed a similar pattern. There have been gains from the copying, but also many short-comings. For example, the tutorial and seminar system can be found in Southeast Asian universities in form, but lacking in function in that there is only limited dialogue and even less student originality and initiative. These systems function well in the western societies because children are taught to question and to be vocal in expressing their views and are rewarded for creative effort. However, with students raised in an educational system which insists on rote learning and punishes creativity and initiative, the tutorial seminar system is

in practice only another lecture period. Independent reading and thinking seldom occur unless the student is convinced it will help him in the end of year examinations. The educational systems which built the foundations for growth in the advanced societies cannot be effective in the developing countries without modifications to adapt them to local needs and goals.

> "History is replete with instances of education playing a major role in raising the level of aspiration and inspiring people to seek progress. Yet the educational system inherited by most of the developing countries was not designed to perform such a task. In these countries education needs to be redesigned. Instead of suppressing human aspiration, education must develop the qualities of drive and initiative, self-reliance and optimism, the urge to experiment and innovate, and above all, the desire to achieve."[3]

A society which invests in education builds its base of human capital. Education as a form of capital investment of a society is not only an essential ingredient in economic growth, but an important factor in building a national cohesion to provide cement to hold together institutions and organizations. A disorganized or chaotic society is incapable of progress. Further, education can bring individual growth and interest in the aesthetic and cultural aspects of life. Beyond food and housing man has needs of the mind and heart. Money spent on education should be regarded as long-term investment, not current expenses. The high dams or steel mills are visible monuments to progress. But in the long run, well-trained teachers and engineers may be of more lasting value. They will build the dams and steel mills of the future without being dependent on foreign personnel. As educated learners, their capital is self-renewing while the steel mill wears out or become obsolete. As pointed out by John Kenneth Galbraith,

> "In the early stages of development, plan creation is not properly a matter of economic planning at all; rather it is to build basic administrative organs, to develop the educational and basic cultural structure, and to get a viable and progressive social system. In Western Europe and the United States these steps following the French and American revolutions laid the foundation for economic advance. In developing its Central Asian republics, as the visitor learns, the Soviets gave high priority to developing an effective system of provincial administration, to education, to providing a transportation system, and to getting the nomads into a settled system of agriculture. These steps were clearly regarded as prerequisites for further agricultural and industrial development."[4]

Theodore Schultz studied the national development of the United States from 1930 to 1960, a period of rapid development. He found that education

[3]Muhammed Shamsul Huq, *Education and Development Strategy in South and Southeast Asia* (Honolulu: East-West Centre, 1965), p. 64.

[4]John Kenneth Galbraith, *Economic Development in Perspective* (Cambridge, Massachusetts: Havard University Press, 1962), p. 37.

was a larger source of growth than material capital.[5] Fritz Machlup, an economist, determined that in the United States of the middle 1950's almost 13 per cent of the gross national product was spent on education.[6] Most nations spend less than half that amount.

Since Machlup's study, the United States has seen not only a rapid expansion of enrollment and investment in higher education, but a growing trend for private industrial and commercial companies to provide their own educational services. In the advanced countries the university degree is truly only a beginning. Continuing education throughout adult life is a necessity to keep abreast of one's field. Human capital is the key to long run, independent, self-sustaining national development.

SOUTHEAST ASIA IN THE NEAR FUTURE

What kind of human capital is needed in Southeast Asia? Toward what kind of knowledge should the money, time, and energies of Southeast Asians be directed?

Certainly the goal of fully developed, responsible individuals with constructive values and attitudes is desirable in all societies, Southeast Asian nations not excluded. Additionally, almost every Southeast Asian nation has recently experienced instability and presently confronts divisive ethnic and idealogical differences internally and externally. Therefore the development of national unity and identity has a high priority. As economic problems present the greatest threat to stability and unity in Southeast Asia, the economic future requires close attention. Universities must give their students the tools and knowledge to cope with these economic problems and to build economics able to bring national development with economic justice, employment, stability, and unity.

What is the economic future of Southeast Asia?[7] First, the region will continue to be essentially a primary producing region (metallic minerals, petroleum products, forestry, rubber, vegetable oils, fisheries, and agriculture). An Asian Development Bank study views the export potential of the region as substantial, with foreign trade serving as the "engine of growth". The export picture appears especially bright as the growth in demand for primary products surpasses the growth in supplies.

Second, population growth will put great pressures on the food supply and the cities and swell the labour force. Approximately eight million people will be added per year between 1973 and 1980. By the year 2000 over half a billion people will live in Southeast Asia, half of them in Indonesia.

[5]Theodore Schultz, *The Economic Value of Education* (New York: Columbia University Press, 1963).

[6]Fritz Machlup, *The Production and Distribution of Knowledge in the United States* (Princeton University Press, 1962), pp. 103-107.

[7]A.B. Santos, *Insight*, May, 1974.

Third, the region will remain a labour surplus area with a high percentage of underemployed and unemployed.

Fourth, because of low per capita income and low savings, the region will require large amounts of foreign capital for industrial development.

Fifth, most workers in the agricultural sector will devote their energies to rice production. In the immediate future about 10 per cent of the population will continue to depend on the inefficient and destructive slash and burn agriculture.

RECOMMENDATIONS: EDUCATIONAL PLANNING

First, educational planning in Southeast Asian nations, a requirement for effective and efficient use of scarce educational resources, should be carried out in the context of national plans and objectives. The national culture and economy depends upon the educational sector for its success. Land and capital are useless without people. Southeast Asia has an abundance of people who, if not developed into assets to their society, will become an economic drain and a divisive force. There is no alternative to the goal of helping Southeast Asian peoples become self-respecting, productive members of their societies.

Second, educational goals should be directed not only toward physical targets, but toward changes in values, motives, habits, and attitudes. This is a sensitive area because there is a fine line between the free private part of an individual's life and that part of his life which he has an obligation to subordinate to society. However, some traditional practices, attitudes, and values which were valid in earlier times are destructive in the present day, e.g. slash and burn agriculture, unlimited population growth. It is difficult for man to discard the past. But there must be a winnowing to retain valuable parts of the past and reject parts not valuable. And this winnowing process must provide new attitudes, values and practices that help the people. It must not be done so quickly that it brings sickness, neurosis, hopelessness, and violence. And the dignity and importance of each person should be respected.

Third, educational goals must be geared to the manpower needs of the nation. The individual needs a saleable skill or ability in order to gain productive work to support himself and his family. And he has an obligation toward his fellow man to contribute to his community and society. The educational system is frequently the avenue of entry into productive work. However, in gearing educational goals to the manpower needs of the nation, the educational system should not be narrowed and reduced to a training ground for an industrial work force. Societies and individuals have broader needs and aspirations. The whole person and the whole society should be the key to educational planning.

RECOMMENDATIONS: METHODS OF LEARNING AND TEACHINGS

Recently a Canadian philosopher gained fame by elaborating the thesis

that the "Medium is the Message". Good teachers have known this for years. The method of teaching and the character of the teacher often have more impact upon a student than the course content. A ten course Chinese dinner is a delightful experience, each course with its own unique tastes and smells. However, if you lumped all ten courses into a common sack and gave one bowlful of the mixture to each diner, there would be a great disappointment. Educational planning often follows this analogy. Separate goals and ideals are formed with great enthusiasm by the planners. Then they are all dumped into one curriculum such as the rote learning/examination system. It is no wonder that students complain about the "paper chase" and "force feeding the duck". Speaking to a conference of teachers, Professor Wu Teh Yao, head of the political science department of the University of Singapore, said, "... Taxing memorization and deadwood examinations have little to do with life... just to measure a child's ability and talents by marks alone is an educational sin... the fundamental weakness of modern education is that a student acquires a lot of knowledge but learns very little about man."[8]

Keeping in mind that teaching methods may have a greater impact upon the students than the content itself, let us examine the educational system itself via its three roots, the rote learning system, the liberal arts, and the technological scientific emphasis.

While most educators agree that rote learning has only limited usefulness, it is widely used. Why? It is probably widely used because (1) it is the other side of the coin of the end of year examination system; (2) teachers usually teach the way they were taught; (3) it is the only learning method the students know. The reason rote learning should be used, if it is to be used, is because it meets the needs of the people and the nation. A certain amount of rote learning may be useful to instill discipline, promote conformity, and to teach basic skills in mathematics, language, and writing. However, too much of a good thing can be bad. The premium placed on memorizing and copying punishes the very creative adaptation and innovation needed by the less developed nations. Western ideas and technology will be essential to their development, but these ideas and technologies should be creatively adapted to the individual societies. Technology itself is politically and geographically neutral. It only rates the adjective "Western" because it was developed there. There could just as well be a body of "Eastern" technology in the next century. However, this can only occur where creativity and innovation is fostered and rewarded. This begins at an early age. In fact, the quality of education of preschool and primary children may be more important than university education. Southeast Asian universities might well benefit their societies by making a careful, objective appraisal of their teaching/learning methods as well as teacher training.

The liberal arts tradition addresses the broader goal of educating the whole man, an indispensable ingredient of the educated man. This valuable contribution should be preserved, with the inclusion of significant materials from the nation's own cultural and philosophical traditions. Students of today,

[8]*Straits Times*, Singapore, June 21, 1974.

being educated for a global society, need the stability of traditional roots and a cohesive national community.

The technological/scientific emphasis makes an indispensable contribution to national development. This emphasis has been especially valuable in preparing people for the government service and for managerial position in large industrial firms, many of them multinationals. However, there is a limit to the number of these positions, and most Southeast Asian nations have a large number of unemployed and under-employed university graduates.

It is especially important that university planning in the technological/scientific area give highest priority to the development of local entrepreneurship and to the matching of university majors with the society's economic needs. Both the methods of learning/teaching employed and the curriculum content are of greatest importance.

RECOMMENDATIONS: EDUCATING FOR EMPLOYMENT

Southeast Asian nations are experiencing rapid population growth, pressures on the food supply, dangerously high rates of unemployment and underemployment, and the array of problems from chaotic urbanization as the hungry and unemployed leave the crowded land space for the glitter and poverty of the city. All of these problems are interrelated. The roots of political discontent and social unrest have their strongest hold among the educated unemployed and hungry illiterates driven from overcrowded land holdings to city ghettos. The key to solving these problems begins with productive employment opportunities.

Only a small part of the total working force of Southeast Asia is engaged in wage employment on a full-time basis (except Singapore). Of this small part the mines and plantations are the chief source of wage employment, with the manufacturing sector providing jobs for less than 5 per cent of the total work force. The bulk of the working population is in the "traditional" sectors of the economy: peasant agriculture, small handicraft operations, retail trading, and other services.[9] Thus, for educational planning the following would be suggested:

1. Aim to expand the "modern" wage economy (regular employment on a full-time basis) by training entrepreneurs who can begin small local businesses with potential for expansion. The large pool of unemployed provides a cheap source of labour and the region has an abundance of natural resources.

2. Focus major effort and attention upon the agricultural sector. As the largest sector of the economy, it possesses the largest number of potential consumers. A relatively small rise in per capita income can have a major impact upon the total domestic market for small locally manufactured goods. In cooperations with government policies and agencies, a large number of university students could be educated and employed to:

[9]Hla Myint, *Southeast Asia's Economy: Development Policies in the 1970's* (New York: Praeger, 1972), pp. 136ff.

a. provides technical assistance to raise agricultural productivity in present crops and to introduce new crops both for direct human consumption and for industrial uses;
b. establish and manage cooperative buying, producing, and marketing association for farmers;
c. establish and manage private or cooperative associations to process and package agriculturally based products for personal and industrial uses;
d. establish and manage industries to convert waste products into useful products, e.g. fertilizer, construction materials, fuels;
e. establish and manage state supported cooperative banks and finance companies to provide small capital amounts to local farmers and businessmen;
f. manage and provide scientific advice to large scale agricultural and plantation organizations for renewable products such as rice, timber, fisheries, rubber, etc.;
g. found and manage small manufacturing plants based on rural labour and/or local raw materials;
h. design, plan, construct, and manage the internal transportation systems to store and to transport the agricultural and manufactured products for local and foreign markets.

3. Include entrepreneurship in present management education and place special emphasis on management of labour intensive industries and businesses. Mr. Khatkhate, an advisor with the International Monetary Fund has pointed out that:

> "In the planning strategies of many less-developed countries, less importance is attached to the management and organization of productive activity than to capital and labour. Many of the developing countries, even when endowed with adequate capital and surplus labour, have faltered in their quest for rapid economic growth, only because they ran short of the essential ability to use those factors in the most efficient manner possible. This means not only a waste of resources but also of time, which in a country confronted with a growing population and its rising expectations may be disastrous. In order to avoid this, the accumulation of managerial skills and organizational abilities has to be seen in its qualitative aspects."[10]

4. Encourage science and arts majors to include a second practical major or minor in their programme (management, accounting, agronomy, public administration) to increase their chances of employability. This would require the universities to adopt a curriculum with enough flexibility for non-traditional and combination majors.

The future employment opportunities of university graduates depend on the general rate of growth of the economy. Thus it is in the university's own interest to devote a considerable portion of its resources to fostering

[10]Deena R. Khatkhate, "Management in Developing Countries", *Finance and Development.*

economic development of the society.

> "From the point of view of promoting economic development, Southeast Asian education systems still tend to suffer from at least two basic weaknesses. Firstly, there is the seeming paradox of a shortage of capable managers, entrepreneurs, and civil servants side by side with the growing army of unemployable university graduates. Secondly, there is a relative shortage of people in the middle-level of technical skills and the blue collar jobs side by side with a relative glut of graduates and school-leavers with academic education".[11]

While the above recommendations would entail an increase in expenditure, a part of the recommendations could probably be achieved by reallocation of existing educational resources.

RECOMMENDATIONS: MORE ATTENTION TO ADULT EDUCATION

By and large, universities have traditionally centered their resources and attention upon a selected small percentage of the post adolescent age group. However, with the rapid changes taking place in the world today, a single educational experience confined to the post adolescent period is not enough. Men and women in their thirties, forties, fifties, and even sixties need to return to the classroom to keep abreast of the new frontiers of knowledge.

In the developing countries, a new dimension is added, the semiliterate, unskilled adult. Industry and government bureaus are rapidly appearing. But the school systems to prepare men and women to work in them were not existing during the adolescent and post adolescent years of the existing work force. And in the realm of technical and vocational education the schools may not yet exist. So a major investment in adult education is needed. There are many advantages to adult education which should not be overlooked:

1. Adults already have experience in life and work, which heightens motivation and the practicality of the education.
2. Adult literacy encourages child literacy.
3. Adult education can help bridge the gap between the traditional elders and the adventurous young.
4. The educated adult is more likely to participate in the citizen duties of a society.
5. The rate of population growth is lower among educated people.
6. The education can be put to immediate use.
7. If the education results in a job, a social gain replaces a social liability.
8. Adult education is less costly than traditional university education because it is an "add on" to the existing system. Existing university and secondary school classrooms are often vacant at night. Part-time teachers can be hired.

[11] *Op. cit.*, p. 145.

9. Adults, needing jobs, readily accept technical and vocational education. They are less concerned with the status of a traditional university degree.

RECOMMENDATIONS: MISCELLANEOUS

In all levels and forms of education, television has great potential. The selection of general entertainment and documentary for public consumption has helped determine what people learn. And the value of the media as a teaching tool is unsurpassed. A lecture to one hundred students in one classroom might just as well be a lecture to ten thousand students in classrooms hundred of miles apart as long as there are following sessions by local tutors. Other forms of media are available, and by judicious selection, can be very effective with a limited amount of funds.

Government requires citizens to contribute part of their wealth to the national treasury, to the military services. Why not require (additionally or as a substitute) of the educated a stipulated amount of teaching time each year? This could be carefully managed and monitored to assure minimum quality. Employers might be given tax deductions if their employee teaches during his working hours.

Multinational firms could be required to provide schooling for children of employees, an adult education programme in their facilities, etc.

With the pressing need for entrepreneurs and administrators, why not include economics and business in the secondary school curriculum?

In summary, most less advanced countries seek a burst of development to meet their pressing economic needs. But the explosion of population will prevent this unless the peoples of the nations are productive members of the society. With rare exceptions, only the educated man will be useful in the society of tomorrow. Universities must concern themselves with the methods and contents of this education from preschool to university levels. The years of the future will see new problems, new jobs, new living styles and conditions. The people to work and manage in this new world are members of today's educational systems. How are they being educated? How prepared are today's universities to predict the future and to adapt their goals, structures, and methods to prepare today's students for the future of tomorrow? What actions are now being taken by the universities to equip themselves for tomorrow? The national development of the Southeast Asian nations depends in part on the answers to these questions.

PART II

NEW APPROACHES TO TEACHING AND LEARNING IN HIGHER EDUCATION

Chai Hon-Chan*

The widening interest in the problems of teaching and learning in higher education is a reflection of a deepening concern over the purposes and the practice of higher education. This may be seen as a response by concerned academics to the rising pressure on institutions of higher education to re-examine their rationale for higher education and, if necessary, to reorientate their aims and objectives as well as revamp their methods of instruction and evaluation so as to ensure that the graduates they produce are equipped with the skills and the capacity to meet the changing demands of society. Until recently, institutions of higher education tended to be elitist and aloof from society, but the rapid socio-economic and political changes have compelled them to be more egalitarian and more responsive to social and economic problems, and new links have now been forged between them and the society which supports them.

As the prime generator of high-level manpower, higher education during the last two decades has been in the vanguard in the modernisation of Southeast Asia. It has succeeded in supplying the critical manpower for the early stages of post-World War II economic development, but the very changes which higher education has directly or indirectly helped to bring about have generated new demands on it. Coupled with political and economic developments in the power centres of the world, changes in Southeast Asia have altered the socio-economic environment from which institutions of higher education derive their rationale. As Southeast Asian societies move into the last quarter of the twentieth century, when science and technology will increasingly dominate and direct their course of development, the role of higher education in shaping the development process will have to be recast. That higher education will continue to have a decisive influence on the rate and direction of social, economic, and political change in Southeast Asia is not in doubt. The question is how effectively it can meet the new challenges ahead. Undoubtedly the key to the answer lies in the process of higher education itself, and in the capacity of institutions to perceive and understand these new challenges and to interpret correctly their implications not only for themselves but also for the society which they serve.

To be able to meet a challenge implies not only a willingness but the capacity to change. Most established institutions of higher education, however, have an in-built resistance to innovation, partly because the complex, interlocking organizational structures discourage it, partly because it tends to be seen as a threat to vested interests. But the major difficulty about educational innovation lies in the fact that the nature of the educational process

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does not lend itself readily to decisive breakthroughs of the kind commonly found, for example, in engineering or medicine, where techniques which have been successfully proven in laboratory tests can be applied immediately and the results evaluated. Unlike innovation in technology and the medical sciences, educational change involves the complex transformation of human behaviour which entails changes in concepts, values and attitudes. It is much more difficult to deal with changes in human behaviour than with those that involve the manipulation of things. Consequently the usual response to the pressure for change in higher education is practical rather than intellectual: It is always easier to recruit more teachers and enroll more students or to extend other physical facilities than to introduce innovations in teaching and learning.[1] Of course, the character of the educational change depends very much on the nature and the magnitude of the pressure for change. In the context of current developments in Southeast Asia, innovation in higher education that deals mainly with physical expansion is likely to compound rather than solve fundamental problems about the educational process. The immediate outward manifestation of the challenge is physical, that is, increasing student numbers, but without minimizing the importance of the pressure of expanding enrollments, it would be a serious misjudgment of the current crisis in higher education if we do not take into account other developments which have long-term implications not only for higher education itself but also for Southeast Asian societies.

PRESSURE FOR CHANGE IN HIGHER EDUCATION

The vast expansion of primary and secondary education in Southeast Asia[2] over the last two decades has led inevitably to increasing pressure on tertiary education. For instance, total estimated enrollment in 1955 at the primary level was about 16 million; in 1964 it had increased to about 26 million, registering a growth of slightly more than 60 per cent. At the secondary level, in 1955 the total estimated enrollment was about 1.7 million; in 1964, it had doubled to 3.4 million.[3] Estimated total enrollment at the tertiary level in 1964/65 was about 826,000; in 1968/69 it had risen to about 1 million, an increase of about 20 per cent.[4] The highest average annual percentage increase in tertiary level enrollments over the five-year period 1965-69 was found in Laos (31.3%), Cambodia (14.7%) and South Vietnam (14.9%). In the Philippines and Thailand it was about 5.8%; in Indonesia and Malaysia, about 3.6%, while Singapore registered a growth of about 2.4%.

The above figures, however crude, do illustrate the growing crisis in numbers and help to explain the rapidly increasing enrollment in higher education. Many established institutions are overcrowded, and in several

[1] MacKenzie, N., M. Eraut and H.C. Jones, *Teaching and Learning: An Introduction to New Methods and Resources in Higher Education*, Paris: Unesco-IAU, 1970, p. 16.

[2] In this context, Southeast Asia is taken to include Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore and South Vietnam.

[3] Unesco, *An Asian Model of Educational Development: Perspectives for 1965-80*, Paris: Unesco, 1966, p. 19.

[4] Unesco, *Higher Education in the Asian Region*, Bangkok: Bulletin of the Unesco Regional Office for Education in Asia, Vol. VII, No. 1, September 1972, p. 13.

countries the pressure has led to a proliferation of new institutions. In Thailand, for example, between 1966 and 1971 six new institutions of higher education were created, in addition to the establishment of an 'open university' — the first of its kind in Southeast Asia — whose initial enrollment was about 40,000, which almost equalled the total enrollments of all the eleven conventional universities.[5] In Malaysia, between 1969 and 1972, five new institutions were established, while enrollments at the MARA Institute of Technology increased rapidly as new courses of studies were created.[6]

Given the continuing high rate of population increase in the region as a whole, enrollments at the primary and secondary levels of the school systems will continue to mount, especially when programmes for increasing retention rates are implemented. Clearly changes at the lower levels of the educational pyramid, particularly at the secondary level, will continue to exert great pressure on institutions of higher education. As the aspirations of secondary school students rise, so will the demand for higher education increase. At the same time the quickening pace of economic development will create its own need for high-level manpower. The combination of the secondary educational 'push' and the 'pull' of general economic development will mean that the pressure on higher education will continue till the end of the century if not into the 21st century. To date the response to this challenge of numbers in most Southeast Asian countries has been a linear expansion of higher education. Many of the new institutions are more or less replicas of the older ones. Some, like the University of Science in Penang, have introduced innovations in cross-disciplines, but methods of teaching and learning have remained fairly traditional. Clearly there is a limit to the present pattern of linear expansion. The existing models of higher education were shaped by socio-economic and political conditions of the 1950's. It is questionable whether, in the rapidly changing conditions in Southeast Asia, the traditional models will be adequate to meet the needs of the next two decades.

Although economic development in Southeast Asia has been slow and, in some countries, uncertain, significant gains have been made in the Philippines, Malaysia, Singapore, and Thailand, and Indonesia is expected to quicken its development with the new wealth from oil. The result is an increasing urbanization of Southeast Asian societies. The rapid growth of new urban centres and the 'urban renewal' of old cities are symptomatic of a quickening social change. With rising levels of educational achievement and relatively widening employment opportunities, the resultant social mobility suggests that the middle-level socio-economic groups are widening. Dramatic changes may be seen in cities like Bangkok, Jakarta, Kuala Lumpur, Manila and Singapore, reflecting the new life-styles of relatively affluent sections of the urban population. To be sure, the increasing influx of rural people to the urban centres also means that the urban poor are also increasing relative to the urban rich: this phenomenon underscores the complexities of urbanization in Southeast Asia.

[5]Sippanondha Ketudat, "Higher Education in Malaysia", in Unesco, *Higher Education in the Asian Region*, op. cit., pp. 126-127.

[6]Ahmad Ibrahim, "Higher Education in Malaysia", in Unesco, *Higher Education in the Asian Region*, op. cit., pp. 101-109.

What is significant about urbanization and quickening social mobility is that an increasing number of students from lower socio-economic groups will be seeking access to higher education. Already the elitist character of many of the older institutions has changed as a result of larger intakes of students from the rural areas or from the emerging urban middle class. Nevertheless, it may be safely assumed that the bulk of students who succeed through competitive examinations in gaining access to higher education will continue to come from the upper socio-economic groups and the urban 'new rich'. For them the 'demonstration effect' of the linkage between high social status and the acquisition of higher education will be the irresistible force driving them to demand wider opportunities for tertiary education, especially in the technical, scientific and professional fields. At the same time the need to make higher education more egalitarian and instrumental in the redistribution of wealth has led governments to intervene on behalf of students from lower socio-economic groups or otherwise considered 'deprived', who might have little chance of getting any higher education. In Malaysia, for example, the dramatic rise in enrollment in tertiary institutions is partly the result of an active sponsorship by the government of Malays and other indigenous groups in higher education, and this is one of the major instruments for the 'restructuring' of Malaysian society.

It is no coincidence that student activism in politics has been on the rise at a time when enrollments in higher education have been at their highest. The awakening social and political awareness of higher education students is likely to lead to greater involvement in societal matters. In common with their counterparts in countries outside the region, student demonstrations reflect not only an impatience with 'the establishment' but a growing restlessness about the relevance of higher education. It is a matter of time before the more perceptive leaders will direct attention at matters which hitherto have been above query or criticism: methods of teaching and examinations, as well as curricula in higher education. This is perhaps the greatest potential source of student pressure for change.

While tertiary institutions have greatly helped to meet the demand for high-level manpower, many have also contributed to the growing number of unemployed university graduates, especially those in the humanities and social sciences, because of a mismatch between actual demand and the supply of various categories of high-level manpower. In part this is the result of faulty planning, or the lack of planning on the part of the institutions, in part the consequence of the shifting demand for high-level skills. Part of the explanation also lies in the difficulty in adjusting student intakes for the various disciplines because of teacher shortage, lack of classroom space and inadequate facilities like laboratories and workshops. Where it is felt necessary to increase student intake, the tendency is to expand enrollments in the humanities and the social sciences which do not require expensive laboratories and workshops.

The shifting demand of high-level skills is the result of changes in emphasis in economic development programmes, and rapid advances in science and technology which have a direct impact on industry and services.

While there is a noticeable change in enrollment patterns in Southeast Asian higher education, ostensibly in response to the external pressures arising from shifts in economic development, the majority of countries still show a bias towards the humanities and the social sciences, as can be seen in the following table.

If higher education is to meet an increasing demand for scientific manpower, enrollments in the sciences will have to expand rapidly. This will strain the supply of qualified and experienced teachers. A problem with more serious implications is the 'knowledge explosion' brought about by the revolutionary advances in science and technology. It has been said that 50 per cent of all research and development work undertaken since the beginning of organised knowledge was completed in the 1960's; 70 per cent of all scientists who have ever lived are alive today; and scientific knowledge doubles every eight years.[7] This phenomenon alone compels a re-examination of the organization of scientific knowledge for higher education and of methods of teaching and learning.

The rising costs of higher education raise urgent questions about the efficiency of institutions in fulfilling their functions and responsibilities to the societies which support them, particularly if the government is the main source of funding. The current preoccupation with cost-benefit problems has raised doubts about the wisdom of increasing investment in higher education when there is an urgent need to develop middle-level skills through secondary education. Absolute and per capita costs in higer education are bound to rise, and institutions are under increasing pressure not only to ensure a close match between the demand for high-level manpower and its supply, but also a greater all-round efficiency in the use of scarce financial resources. For this reason attention is likely to focus on staff-student ratios and general efficiency in teaching.

SOME DIRECTIONS FOR CHANGE IN HIGHER EDUCATION

In view of the revolutionary advances in science and technology, the continuing 'knowledge explosion' and the rapid socio-economic changes in Southeast Asia, it seems necessary to ask: how relevant are the current forms and practices of higher education to the needs of the present and the immediate future? In other words, are the aims and objectives of higher education which were perhaps appropriate to the needs of twenty or even ten years ago still pertinent today?

An international group of educationists has recommended that the 'master concept' for educational policies in the years to come should be 'lifelong education', which is the 'keystone of the learning society' in which every individual must be in a position to keep learning throughout his life.[8] If this is taken as an example of a general aim in higher education, it will have certain

[7]MacKenzie, N. *et al*, op. cit., p. 31.

[8]Faure, E., F. Herrera, Abdul-Razzak Kaddoura, H. Lopes, A.V. Petrovsky, Majid Rahnema and F.C. Ward, *Learning To Be*, Paris: Unesco, 1972, pp. 181-182.

PERCENTAGE DISTRIBUTION OF HIGHER EDUCATION ENROLMENT BY BROAD FIELDS OF STUDY IN SOUTHEAST ASIA

Country	Academic Year	Total	Humanities, Education, Fine Arts	Law, Social Sciences	Natural Sciences	Engineering, Medical Sciences, Agriculture	Not Specified
Indonesia	1967	100	26.6	40.6	3.6	22.8	6.4
Khmer Republic	1967	100	28.1	10.2	—	34.3	27.4
Laos	1970	100	35.2	28.6	—	36.2	—
West Malaysia	1969	100	53.3	17.8	8.3	20.6	—
Philippines	1968	100	45.7	32.5	3.9	17.6	0.3
Singapore	1970	100	36.4	12.1	11.5	39.1	0.9
Thailand	1970	100	32.0	33.4	5.2	26.4	3.0
South Vietnam	1965	100	35.6	26.5	19.9	18.0	—

Source: Unesco, *Higher Education in the Asian Region*, Bangkok: Bulletin of the Unesco Regional Office for Education in Asia, Vol. VII, No. 1, September 1972, pp. 14-15.

implications for curriculum development and for individual course objectives, which in turn will determine methods of teaching and learning.

Why are aims and objectives necessary? Aims are a general statement of intent to give direction and purpose to a programme of teaching and learning, and objectives provide the guidelines to that direction and purpose. Looked at another way, an aim is the answer to the question of why a subject is taught, and an objective is the answer to the question of what will have to be achieved when it has been taught. Usually aims in higher education involve three distinct kinds of objectives: (1) the acquisition of a specific body of knowledge; (2) the development of intellectual abilities; and (3) the inculcation of attitudes and values. Of course, the emphasis varies from one field of study to another, and from time to time. In practice, however, few institutions of higher education make explicit what their aims and objectives are, and fewer still deliberately relate them to their academic programmes. It is a rarity to find a Faculty with a declaration of aims, and it is unsual to come across individual courses with a clear statement of objectives. Notable exceptions tend to be found in courses in the medical sciences where 'behavioural outcomes' and their precise evaluation are crucial to the success of their teaching programmes. Most academic courses are 'subject-centred', reflecting the preponderant emphasis on the acquisition of 'a body of knowledge'. Courses are apt to be described in terms of the syllabus, but the listing of subjects to be 'covered' provides little or no guideline for the evaluation of the competencies which are to be acquired.

Traditional teaching methods assume that the acquisition of a particular body of knowledge is sufficient for a person to apply it or to innovate with new techniques. Research evidence shows that there is no basis for this assumption. Individuals may be able to recite extensive information but fail to apply it, or they may learn to behave in practical situations but lack the verbal skill to explain their behaviour.[9] This is a common weakness among science graduates who work outside their own particular field of specialization.

The rapid expansion of knowledge, and the high rate of obsolescence of 'old' knowledge, point to the need to reappraise the traditional emphasis on the acquisition of a set body of knowledge as the main objective of academic courses. The ability to memorize 'facts' is becoming less relevant than 'learning how to learn': the skill in identifying a problem and finding the relevant information for its solution is commensurately more important than the possession of book knowledge. This is not to minimize the importance of acquiring a body of knowledge, for clearly it is the prerequisite for individual intellectual development, but it should not be emphasized to the exclusion, in practice, of other skills. A change in emphasis of this nature will inevitably transform both what is taught and the way it is taught, and consequently the way students' skills and competencies are assessed.[10]

Aims and objectives are crucial to a logical development of the educational process. They provide a necessary frame of reference for the planning

[9]Ruth Beard, *Teaching and Learning in Higher Education*, Penguin, 2nd edition, 1972, p. 16.

[10]MacKenzie, N. *et al*, *op. cit.*, p. 30.

and implementation of academic programmes; and they stand as the signpost for both teachers and students. Explicit objectives are particularly important because they facilitate communication between students and teachers; they form a concrete basis for the evaluation of teaching and learning; and they are indispensable for a rational and efficient selection of teaching and learning activities.[11] On the other hand, if there is no clear statement of objectives, the student is often left to guess from the syllabus or past examination papers what he is expected to master. Much of the anxiety among students stems from the lack of knowledge about course objectives, and a high level of anxiety is a hindrance to constructive learning. In this situation higher education is often reduced to the level of how well students succeed in 'spotting' examination questions.

Teaching and learning lie at the heart of the cooperative process of higher education. A common statement of objectives serves as a bond between teacher and student as they work towards the achievement of those objectives. It will help build up trust and confidence in the teachers, increase student initiative in self-learning, develop student capacity for self-evaluation and encourage cooperation between students. Explicit objectives also provide the basis for cooperative teaching between departments, especially where cross-disciplinary learning is emphasized. But without clearly defined objectives, 'integrated programmes' will be difficult to plan and impossible to implement.[12] Thus planning in higher education should begin with a statement of course objectives which must reflect an appropriate knowledge of the discipline. They must specify clearly the norms, knowledge and skills students are expected to acquire, they must be appropriate to the previous knowledge and academic development of students, and they must be attainable within the constraints of available time and facilities provided. From the objectives are derived methods of teaching and learning and procedures for evaluation. These procedures must be valid and reliable checks on the course objectives.[13] In practice most courses of study implicitly involve objectives, teaching methods and evaluation, but often objectives are unclear or not specified, and evaluation tends to come as an afterthought at the end of the course.

Where evaluation takes the form of written examinations, the tendency is to focus on the aspect of learning that involves the acquisition of set knowledge. Often the main purpose is to grade students or to discriminate between them. Such practice tends to ignore the need to ensure a close match between evaluation procedures and the course objectives. Where student test scores bear no relation to the course objectives, there is no way of ascertaining how efficient teaching has been, and therefore there is no rationale for trying out alternative approaches to teaching. This may explain why teaching methods in higher education have remained traditional. If evaluation is to contribute

[11] MacKenzie, N. *et al*, *op. cit.*, p. 113.

[12] *Ibid.*, 114.

[13] Barbara Falk and Kwong Lee Dow, *The Assessment of University Teaching*, London: Society for Research into Higher Education, November 1971, p. 3.

to a progressive improvement in teaching and learning, it must be based on clearly formulated objectives.'[14]

One of the most serious stumbling blocks to the improvement of teaching and learning in higher education is the prevailing system of incentives and rewards for teachers. In the selection and appointment of new staff, some attention is paid to teaching ability or experience if it is mentioned at all in letters of recommendation. Otherwise it is assumed that academic qualifications and research experience and publications are sufficient to equip the person for teaching. The practice is slowly changing in Britain where over the last five years a large number of universities have made arrangements for at least the initial training of new teachers.[15] In general any suggestion for the training of university teachers is likely to be laughed off or taken as an affront to their self-evident ability to teach. Young inexperienced teachers tend to copy the teaching methods that they themselves experienced as students.

The problem is not likely to receive much attention so long as promotion is based mainly on research and publications. To be sure, confidential reports for promotion exercises include statements, usually in positive terms, of the staff member's ability in teaching, but there is seldom any obligation to assess the actual teaching skill of the person concerned. Students may grumble about poor teaching, but few would trouble to lodge a formal complaint against a teacher's pedagogical failings. In most institutions teachers soon learn that their professional advancement depends heavily on research and publications, and they will gear their work accordingly. Conversely, it is almost unheard of to have an academic promoted mainly on the basis of his excellence as a teacher.

The reward system appears to be based on the assumption that a university teacher must, all other things being equal, contribute to the advancement of learning and that this can be done only through research. By the same token, an academic with few or no research publications may not be considered worthy of a place in an institution of higher education. The conclusion, therefore, is that research is considered far more important than the teaching and training of students. It helps to explain why it is common practice among many academics to devote the major portion of their time and energy to research and to regard teaching as almost incidental. On the other hand, conscientious teachers who give their time and energy to their students may find that their research activities have to be curtailed; and if they fail to produce the necessary research publications at the time of their promotion exercise, they may be penalized. This may be an over-statement of the case, but the point is that most institutions do not explicitly stress the importance of teaching even when their major responsibility is in fact the training of undergraduates.

The high cost of higher education has raised questions about the productivity of tertiary educational institutions. In recent years the prices of inputs,

[14]MacKenzie, N. *et al*, *op. cit.*, p. 114.

[15]Ruth Beard, *op. cit.*, p. 8.

especially teachers, have been rising in real terms, even relative to other wages. To be sure, the salaries of academics in some countries in the region are relatively low, and many are compelled to spend part of their time 'moonlighting' to supplement their income. Nevertheless, considering the increasing financial inputs into higher education, institutions are under pressure to raise their productivity. Admittedly it is very difficult to measure productivity in higher education, but even in very crude terms the output of graduates should provide an index. The fact that the most urgent need is to increase rapidly the output of highlevel manpower is ample justification for placing a higher premium on efficient teaching than on research, particularly where research is done for its own sake without relevance to the needs of teaching and learning. This is where a re-examination of the priorities of higher education will help clarify the issue and correct the ambivalence towards research and teaching as reflected by the reward system. It must be reiterated that institutions of higher education need *both* sound research *and* efficient teaching: the question is whether incentives and rewards can be adjusted to strike a more rational balance between the two.

Greater efficiency in teaching undoubtedly is the key to higher productivity in higher education. In most economic sectors improvements in productivity have been achieved through the combination of human effort and technology, and it seems reasonable to expect a similar pattern in higher education. The question is what sort of mix of educational technology and teachers for what teaching-learning situations will increase productivity? There is no clear answer. The following section will attempt to highlight some of the major problems of applying technology to higher education and suggest alternative approaches to teaching and learning.

TECHNOLOGY FOR TEACHING AND LEARNING

A widely-held view is that educational technology, especially instructional television of ITV, is the answer to the problem of teaching large numbers of students. Certainly in the context of Southeast Asia educational technology offers immense possibilities in higher education, and it is likely that it will change the *role* of the teacher. In the foreseeable future, teaching methods like the lecture, the tutorial, the seminar, and other techniques for instructing small groups of students are likely to remain, but in modified form under the influence of technology. The purpose here is to examine some of the possibilities and problems of instructional radio, instructional television, and programmed instruction.

INSTRUCTIONAL RADIO (IR)

The advent of television has somewhat overshadowed the importance of radio as a means of mass communication. Nevertheless it remains an effective and economical medium for reaching large numbers of people in Southeast Asia. This has been made possible by the invention of the transistor radio. For teaching purposes, its chief advantage is its low cost (compared with television). Although its popularity has declined in the United States, IR is still extensively used in school broadcasts in many of the developed countries, notably Australia, Britain, and Japan. In Southeast Asia it continues to be an

important supplement to classroom teaching. Thailand, for example has well-developed IR in music, social studies and the teaching of English.

For higher education purposes in Southeast Asia, the potential of IR needs to be developed. One possibility is its use during the 'long vacation' for supplementary or introductory courses. With the development of tape-cassettes, it is possible to record lectures which could be housed in a library where students could use them repeatedly in the same way as books. In fact, complete courses could be recorded, with visual materials printed as supplements. A complete 'university of the air' could be developed as a means of meeting the needs of large numbers of students, but of course such an idea would need more than the radio. Its low cost and relatively simple technology are strong arguments for exploring the possibility of using instructional radio to supplement conventional higher education courses.

INSTRUCTIONAL TELEVISION (ITV)

The chief drawback of ITV is its high cost in terms of 'hardware', maintaining specialist staff, and time required of teachers to plan for and produce programmes. Besides the question of cost, other technical problems have to be borne in mind. Because television commands the attention of eye and ear, the quality of ITV presentations must be of a very high standard. In televised lecture presentations the lecturer is subjected to an entirely new range of demands which may discourage even the most experienced teachers. Where in a conventional live lecture the teacher may be able to get away with a mediocre or poor presentation, the television camera will expose every weakness in his teaching. Television demands completely new attitudes and approaches to teaching because it incorporates all relevant techniques and synthesises them into an overall presentation. Holroyde points out that because television has its own 'pictorial grammar', the teacher must follow certain basic rules in the use of visual material:

> He cannot present [the] sequence of images on his own but must have the assistance and full co-operation of those who know how to manage the medium. He must, moreover, be conscious that there is a greater need for imagination and professionalism in his presentation because the television screen will concentrate attention on everything he says and does. He will need to recognise that the viewers' capacity to absorb information simultaneously through the eye and the ear means that he can use verbal and visual language to complement rather than to duplicate each other. And he should structure his presentation in a way that helps the camera to direct the eye of the learner to whatever should be the central source of information at any one time.[16]

There is no doubt that television can be a powerful aid to more effective teaching and learning, particularly in the sciences, including medicine,

[16]Derek J.G. Holroyde, 'The Use of Television in University Teaching', in David Layton (Ed.), *University Teaching in Transition*, Edinburgh: Oliver & Boyd, 1968, p. 119.

technology, the visual arts and the social sciences as well as education. Television, like other forms of audio-visual aids, augments and transforms the conventional presentation, but the teacher remains the crucial factor in effecting learning. In the context of Southeast Asian higher education, ITV could solve serious problems of student numbers. It could promote greater interaction in the teaching-learning process. It could stimulate the consideration of new teaching methods. Perhaps most important of all, ITV provides a concrete basis for the evaluation of teaching to ensure its progressive improvement.

PROGRAMMED INSTRUCTION (PI)

The development of programmed instruction is credited to the Harvard psychologist B.F. Skinner, whose findings in the early 1950's relating to the learning of animals provided the central idea of reinforcement as the basis of human learning. It is believed that the instant 'reward' for constructive or correct responses to a learning task and the withholding of such 'rewards' for incorrect or undesirable responses encourage or shape a person's learning behaviour.

In PI learning tasks are made up of progressive steps moving from simple to complex patterns of understanding, each correct step reinforcing the learner and encouraging him to the next until he completes his task. The use of 'teaching machines' in programmed instruction is not so much to dispense with the physical presence of the teacher as to ensure that learning is efficient and its outcome measurable, thereby providing the basis for the evaluation of teaching and learning. PI may be the answer to the problem of individualized instruction when, under the pressure of large numbers, individual differences in learning capacity and needs are buried under the necessity for the teacher to pitch his teaching at a pace and level to cater to the average student. With PI the student works at his own pace, and he receives immediate 'feedback' for each learning task completed.

The necessity for explicit and precise objectives in PI increases communication between the learner and the teacher, and it focuses the attention of the learner on the learning tasks, increasing his motivation to achieve.

There are two kinds of PI: the more familiar known as the 'linear' or 'intrinsic' programme devised by Skinner, and the 'branching' or 'extrinsic' programme whose original design is attributed to the American psychologist N. Crowder. In the linear programme, small elements of instruction called 'frames' are structured and sequenced in such a way as to lead to progressively more complex skills. Each frame typically contains a question or a learning task whose correct response depends on the student's understanding the material provided in the frame. After his response, the student is shown the correct answer, together with any relevant comments if necessary. In this way his effort is reinforced and he is encouraged to move on to the next frame.[17] The branching programme incorporates 'branches' to allow for different sequences in learning and to enable a student who makes the wrong response to see *why* his answer was incorrect.

[17] J.R. Hartley, "Programmed Learning", in David Layton, *op. cit.*, pp. 105-106.

PI seems particularly well-suited to subjects which lend themselves to 'structured' learning. Its use so far has been extended to the medical and physical sciences, mathematics, language teaching, and some of the social sciences. However, two major drawbacks may discourage the widespread use of PI in Southeast Asian institutions of higher education. The first is the relatively high cost of producing a programme. It has been estimated that a 3-hour programme may require a minimum of 80 hours' careful work. The second is that, with the high rate of knowledge expansion and obsolescence, expensive programmes may soon go out-of-date or may require extensive revision.[18]

A new development of programmed learning is computer-assisted instruction (CAI). It is the most recent application of technology to teaching and learning. Its use so far, however, has been confined to countries where computer technology has been the most advanced. Among all instructional media, CAI is the most expensive in terms of initial cost of instruction per hour. However, it provides 'the richest and most highly individualized interaction between student and the curriculum of any of the methods of instruction yet developed'.[19] It is especially suited to branching programmes which allow the student to deviate from the central sequence in order to obtain knowledge which he failed to understand earlier, or to find out why he made a mistake. In the United States CAI is often used in learning programmes which require drill-and-practice such as in mathematics and language learning. Where effectiveness is measured by standardized tests, the evidence suggests that CAI is much superior to traditional instruction.

Apart from the high cost of programmed learning, some criticisms leveled at PI are that the structured sequence of learning does not allow for flexibility and social interaction, which are important in the educational process, and that individual differences cannot be adequately accommodated. Furthermore, students have to book time at the machine. Clearly PI will give rise to a host of new problems, and there are no simple answers to them. The possibilities are there to explored, and the research findings of the developed countries on the use of PI should enable institutions in Southeast Asia to decide whether or not and how best to introduce this particular technique of teaching and learning. One way to overcome the problem of cost is for Southeast Asian institutions to pool their resources initially to develop and share prototype programmes in science and technology and to set up resource centres to service them.

PROSPECTS FOR NEW APPROACHES TO TEACHING AND LEARNING

The various forms of educational technology now available could revolutionize the process of higher education in Southeast Asia. But educational technology is no more than an augmentation of the task of teaching which

[18]Ruth Beard, *op. cit.*, p. 167.

[19]Dean Jamison, P. Suppes and S. Wells, "The Effectiveness of Alternative Instructional Media: A Survey", *Review of Educational Research*, Winter 1974, Vol. 44, No. 1, p. 42.

must remain the primary responsibility of teachers and not machines. Computers do not write their own programmes: they are as efficient as the people who use them. Any change in teaching methods presupposes a change in the attitudes and skills of teachers. While it is appreciated that many enterprising teachers on their own initiative do innovate in instructional methods and have, in their own way, contributed importantly to the development of higher education, the fact remains that few institutions in the region have systematically carried out research on alternative teaching methods.

In view of the mounting pressure on higher education from so many directions, change in teaching and learning must be purposeful and systematic, and this can best be achieved through a systems approach to innovation. Because the pedagogical skills demanded of teachers are complex and are crucial to the further development of higher education, institutions can no longer rely on the traditional trial-and-error approach to teaching adopted by individuals. The existing criteria for the recruitment of teachers in most institutions — criteria based mainly on research experience and publications — strongly suggest that a systematic pre- and in-service training of new teachers is necessary. Of course, training by and of itself will not ensure an improvement in teaching, but certainly it will help to widen the horizons of those who have nothing to fall back on except memories of their own experiences as students under their former teachers, and who are apt to imitate bad as well as good teaching methods. A strong incentive for innovation is to reward effective teaching as much as research and publications. Such a shift in emphasis will more accurately reflect the fundamental aims of higher education: the development of people.

Evidently many institutions of higher education suffer from a shortage of teaching and learning materials, the most common and most acute being suitable textbooks. The rapid output of new knowledge in science and technology makes it necessary to revise or change textbooks every five years, if not sooner. Foreign textbooks are expensive and are often unsuitable for local use. In some institutions teachers are compelled to resort to producing cyclostyled notes for their students. The cost of producing textbooks in the national language tends to be high because of the limited market. One solution appears to be the acquisition of a working knowledge of a foreign language which gives access to a wider range of printed materials. This implies that students will have to be effectively bilingual at least. However, language competency should include reading skill to enable students to read widely and with discrimination. In addition, students should be shown how to use library facilities, how to locate and extract information quickly from reference sources, and how to compile notes. Investment in time and effort to acquire these basic skills, especially during the first year of studies, will pay big dividends in subsequent years.

There is an urgent need for institutions to invest in new teaching and learning materials, both the 'software' and the 'hardware'. Economies of scale could be achieved if various institutions within a country could cooperate in the production of teaching-learning materials, such as films, slides, and videotapes. If ITV and other forms of educational technology are to be used,

cooperation will be imperative to cut down costs and to rationalize the use of other scarce resources. However, cooperative ventures require certain pre-conditions: agreement on common objectives and procedures for evaluation.

The prospects for developing and supporting new approaches to teaching and learning in higher education would be much brighter if several institutions of higher education in Southeast Asia could work out a common programme to resolve common problems such as innovation in teaching methods, the pre-service and in-service training of teachers, the production and/or sharing of new teaching-learning materials, and the dissemination of information pertaining to all these and other related matters. The capacity of individual institutions to meet the pressure for change would be considerably strengthened if on the regional front there are collective and cooperative strategies to meet the challenge.

PART III

UNIVERSITY RESEARCH AND SERVICE TO SOCIETY IN THE SOUTHEAST ASIAN CONTEXT

Niphon Kantasewi*

Research, next to teaching, is the most important function of the university. It is the function that makes the university distinct from other types and levels of educational institutions. There are two types of research — basic research and applied research. Basic research seeks to understand what is, how it is and why it is, whereas applied research pursues what can be and how it can be done. Both types of research are interdependent, and must be conducted simultaneously. Today's technology could not have been made possible had there not been a past evolution of basic research. On the other hand, later developments in science and technology have made possible more efficient further research into the basic facts and principles. For example, without modern technology and tools, basic research would not have gained more detailed information on the composition of an atom, or human reproduction. Progress in applied sciences has obviously brought advancement to basic research, but the latter is a prerequisite of the former. Together they have accelerated the process of industrialization.

Research can be regarded as a symbol and is an integral part of modern progressive society. Members of developed societies are on the average more research-oriented than those of the less developed. Research not only produces concrete end-products of material or obvious utilization, it trains the mind and sharpens the thinking processes of man. Research is not confined only to natural sciences or those disciplines that lend themselves to conventional methods of measurement. Research, with man's determination and intelligence, can even discover facts about the abstract aspects of man, such as the spiritual phenomena through which man is believed to exist.

Though man is already overwhelmed by the waves of modern applied sciences and technology, much more research is yet needed, for his needs and problems are multiplying unceasingly. We have conducted extensive research on carbon-composed fuels and their uses and come up with a vast number of machines and gadgets for our convenience. Increased utilization of such fuels has also driven us to look for more oil. Oil resources will eventually become depleted from the planet Earth. We have to look for other sources of energy as fuel substitutes or other devices to substitute for the present modes of convenience. All these call for more research.

Man has almost exhausted his conventional sources of foods due to increasing scarcity of land for agricultural cultivation, global pollution of water resources, and other disturbances to the environment. More research studies are needed to find new sources of foods, better ways of producing foodstuffs, and the means to solve pollution problems.

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As one problem after another is solved, new problems are created by previous solutions. Some are consequences while others are side effects. Some are biological while others are physical and chemical. Some are concrete while others are abstract. Some are economic while others are cultural and political. The list is inexhaustible.

FUTURE NEEDS FOR RESEARCH IN SOUTHEAST ASIA

Among countries in Southeast Asia, Singapore seems to rank top in overall national prosperity, and is most industrialized. The second rank goes to Malaysia. The rest may be the Philippines, Thailand, Indonesia, Vietnam, Laos and Cambodia respectively in arbitrary order. In all these societies it is obvious that economic prosperity has been made possible by, and is based upon, certain social behavioral characteristics of the peoples. Peoples in more prosperous countries are in general better organized, have a higher degree of self-discipline, and a greater sense of social responsibility. This seems to indicate the role of cultural and psychological factors in either accelerating or slowing down the overall development process of the country. Many underdeveloped countries are rich in natural resources, particularly in arable land for cultivation and other agricultural production, and in mineral and fuel resources necessary for industrial development. Yet standards of living are tragically low, and political chaos prevails.

It should be the role of the university in Southeast Asia to study such situations and identify causes and related problems, to find proper solutions, and to participate in the whole process of national economic and social development.

The idea is based upon a utilitarian or experimentalistic philosophy of education which suggests that the university's raison d'etre is to serve society in a leadership capacity. The university, being accepted as the highest-level training institution for manpower and citizenship, must be perceptive of the future of its own society and the world at large. Furthermore, it must have a comprehensive understanding of its present and past situation. The university, set up primarily for academic purposes and spared other routine government activities, can study the whole perspective of the society and the world with a more reflective approach. The university prepares its students to manage the changes in life and to reconstruct the social order if necessary. This seems to assign the university the role of direct participation in national development, particularly in developing manpower, planning development programmes, and cooperating with other agencies concerned in implementing the programmes.

Responsibilities in Research

Traditionally, basic or fundamental research in any field is entirely assigned to the university, while applied or operational research is conducted by agencies or organizations outside the university for use in business, industry, or government, as the case may be.

In Southeast Asian countries, autonomous research institutions are usually operated by certain international cooperative agencies or foreign philanthropic foundations. The national government encourages each ministry to conduct its own "research" which, in most cases, is confined simply to statistical compilation of the department's activities and achievements to be presented to higher authorities and the public. There is, no doubt, some research which is quite academic and highly technical carried out by such organizations.

Practically all countries in this region are classified as "developing". In such countries, efficient mobilization of trained personnel is of vital importance. Hence there is a great need for research into how best to use human and other natural resources in economic and social development.

The university should give the highest priority to conducting research projects that are sponsored by or through the government. The major rationale is that research, either in the process of product aspect, should be used to enrich the knowledge in the subjects taught at the university. The future economic and social development of a nation depends upon the quality of its students. They should have access to up-to-date subject-matter, and be taught by sophisticated educators who not only teach but also carry out research related to the content of the courses they teach. In doing research, especially the applied type, teachers familiarize themselves with the actual problems and processes of operations in the field, in business, industry, or public works. This has proved to be an effective way of keeping teachers abreast of the real world of experience, and linking vicarious situations in the classroom with real life ones. Such research should at least be conducted by teachers in cooperation with personnel responsible for the work under investigation. With such cooperation, the projects would be more efficiently utilized by both the university in its teaching and the agency in its operation.

Current trends indicate a decline of external financial support for research work in Southeast Asia, especially from the United States, from both private and governmental sources. Southeast Asian governments will have to concentrate on securing their own local funds and consolidating the formerly dispersed research efforts. National agencies, like the National Research Commission in Thailand, should play a more important role in coordinating and combining these efforts for the benefit of the whole nation as well as of the parties concerned. Research work, furthermore, should be conducted not by individuals in universities but by a consortium of scientists from many institutions.

As mentioned earlier, research projects to be conducted should be relevant to certain aspects of national economic and social development plans. Horizontally and vertically there should be a comprehensive master scheme for research set up by a proper government agency with consensus of the consortia. Some research projects should include appraisal of previous programmes and experiments or studies for future operations, while research

of various disciplines would be simultaneously carried out within the master scheme. In this way problems will be more effectively and efficiently solved.

Research in Natural Science and Technology

The less the development of a country, the greater is the need for research work in locating local resources and transforming them into forms useful to national development. Much more intensive research is needed in food production, nutrition, and dietetics. Light industries and assembly plants are required to produce consumer goods and convenience-giving commodities. Research in industrial technology for these industries is becoming a necessity for economic development as Southeast Asian countries become independent of the world's big powers. The countries which possess abundant natural resources, particularly industrial raw minerals, will look for possibilities of starting heavy industries of their own. Consequently, research to improve both the processes and the end products will be in greater demand. These developing countries will be in strong competition with the existing industrial nations whose present status doubtless rests on research efforts. Without research, industrialization will be stagnant and rapidly deteriorate. A society's development cannot continue if it is based on borrowed technology. In a few years such a nation will sadly find itself left far behind.

Health science research will remain of paramount interest in spite of its long and steady standing. A great number of health personnel in medical schools will get involved in community medicine and health services in long neglected sectors of Southeast Asian societies such as the rural and slum areas. Consequently, there will be feedback resulting in research, and the search for solutions to the problems will be promoted.

Research in Social Sciences and Related Fields

In most Southeast Asian countries research work in social sciences is lagging behind its counterpart in other disciplines. This is due to several factors. First, social sciences are relatively new to this region. Courses in these disciplines were first offered in institutions of higher learning only about a hundred years ago. Today there are only a handful of social scientists who desire to be and who can afford to be actively engaged in research work. Research activities in these fields have not been sufficiently encouraged by the respective governments. The more democratic the government is, the more intensively research in social sciences is carried out and made use of. Most Southeast Asian countries do not have a democratic atmosphere that would encourage social science research to flourish.

It is quite apparent that in Southeast Asia the Philippines is foremost in social sciences research and has the largest number of scientists in this discipline. This country has a long history of democratic government and a social atmosphere conducive to social research endeavours. Malaysia, Singapore, Indonesia and Thailand follow along the line. This arrangement of ranking is, of course, based on the author's arbitrary criteria and personal observations.

Southeast Asian countries are striving toward industrialization along with the rest of the world in Western style. If Harbison's criteria of economic development are accepted, most countries in the region are either at the fourth or fifth level. These nations, like it or not, will struggle to move upward to a better or higher status in the system of economic and social development. Societies at a higher development level somehow have a certain amount of economic, political, and psychological influence over those at a lower echelon.

Universities in this region will have to devote certain efforts to studying their own cultures and personality characteristics so as to increase the people's insight into themselves, and to find better ways for instituting desirable changes in the national development process. Social research in these situations would include determination of more effective methods of educating the people and preparing them for the way of life of a changing and industrial society without disrupting their mental and emotional balance.

Research into the history of economic, political, and cultural development both in depth and breadth is still desirable. New light might be shed on the origins and evolution of Southeast Asian societies, just as new techniques and theories have been devised in the West. Studies of customs and traditions of the peoples in each country require long range planning and execution to determine more accurately the trends of cultural change. This kind of information is necessary for preventing social and political calamities in the process of economic development.

More studies are needed in determining the causes of social problems that are aggravating the already worsened economic and political situations in many countries in Southeast Asia. Research is needed in social psychology and criminology. More effective ways must be found to prevent or solve the crimes that threaten the security of the people.

As business and industry are expanding in this region, problems in management will manifest themselves more clearly. As a result, labour unrest, conflicts between workers and management, ineffective and inefficient production, etc. will emerge with increasing frequency and intensity. The government will be called upon to intervene and settle the disputes. More research studies of such situation are desirable and should be assigned to certain non-partisan institutions like the university.

Research in the Humanities

While economic and political development activities are proceeding in these developing countries, the people will find material life exciting and yet empty. National pride in their own cultures is losing out to the influx of Western values, fads and fashions. They should be aware of this and preserve as well as cultivate their own cultural heritage, especially languages, music, literature, and art. Historical research into the origins and meaning of the culture will encourage greater appreciation for patriotic and aesthetic values.

SERVICE TO THE PUBLIC

Among the countries of Southeast Asia, the Philippines again seems to be in the forefront in terms of university services to the public. The concept of "extension" services to the community has long been practised in the field of agricultural and rural development. Certain university teachers are assigned in this case to acquaint themselves with farmers or rural people and their problems, and to bring back such problems to the university for study. As soon as proper solutions have been found, the information is effectively disseminated to the farmers. Farmers are encouraged to make direct contact with the university to keep themselves abreast of useful innovations. Short courses and short-term training programmes are set up and offered to the public to improve their farm and home life as well as the community life.

The university extends similar services to other sectors, namely, business and industry. Some university professors are called upon to assist in setting up policies and development planning at the ministerial or national level.

In Thailand and Malaysia, university students have been active in voluntary rural development projects on their own initiative, and with the cooperation of concerned government agencies. In Singapore, students have volunteered to study urban and industrial work conditions.

In recent years, Thai university professors have been involved in social and economic development planning, in providing private business firms with modern management training, and in supporting the political development of the general public.

This pattern of public service rendered by the university will definitely continue for years to come in Southeast Asian countries. It should not be difficult to imagine that in the future, relevance to the society will be accepted as a major theme and a raison d'etre of the university in this region.

PART IV

INNOVATIONS IN THE MANAGEMENT OF HIGHER EDUCATION IN ASIA

Victor M. Ordonez*

The challenges facing higher education in Asia are in a more fundamental sense those facing Asia itself as it struggles to telescope the difficult process of national development into the next few crucial decades. Higher education in this continent cannot conceive of its role in a vacuum or solely in the context of the international academic community; it must not only situate itself but also service directly the Asian continent, with its teeming millions encompassing one half of the world's population and 80% of the world's hunger and poverty, its ancient and venerable history its myriad problems and its vast, unrealized potentials. Higher education must be prepared to deal with this region, with all the nightmarish implications of that challenge, and hope to find, in this confrontation, a significant role for itself, within the Asian context.

The traditional myth about Asia is its lethargy, no doubt an offshoot of having struggled with a legacy of centuries — of traditions and habits and attitudes which, in the past enabled this innumerable number of people to survive and which, in the present, continue to operate in the Asian consciousness, whether such traditions and attitudes are conducive to survival or not. But under the impact of the coming of the West, and under the tremendous pressure being exerted by a rising population, this lethargy is increasingly becoming relegated to an Asia long gone from the contemporary scene. In the past decade, we have witnessed fast and nearly frenzied transformations occuring on the Asian stage: there was Vietnam, Laos, Cambodia and now, very swiftly one or two others may be approaching a point of crisis. This is perhaps a misnomer — for in Asia, no critical points in its history exist. What we have is the existence of chronic crisis — a long, drawn-out affair of confrontation with problems, and between problems and traditional institutions and means of resolving them. At some point or the other, the problems overwhelm the solutions and thus, we witness a flare-up, a sudden nova-like explosion which radically alters the face and image of Asia. What these all add up to is that the region is, contrary to the myth, a dynamic one.

This being so, it has become imperative that the management of higher education in Asia assumes forms that would directly address the region's needs in the context of a galloping pace towards development and post-colonial self-reliance.

This is not the place to go into the preponderant issues and problems demanding priority attention in Asia. The list is both complex and long, and varies from country to country, but the reader is familiar with them. What is perhaps worth exploring in greater detail would be the implications that

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these issues and problems have had on the management of the higher education in these countries.

I

Higher education, as it is commonly understood to mean post secondary education for the emerging adult in a specific academic or professional field, is largely a legacy from the West. As such, the majority of universities and colleges in Asia tend to be patterned after the proto-type universities of their former colonizers. The organizational structures and patterns of management in these universities resemble their American, British or European counterparts and their administrators are often themselves graduates of Western universities. It is, therefore, not surprising that as problems and opportunities peculiar to present-day Asia arise, universities sometimes find themselves inadequately organized and geared to address these.

The awareness of this phenomenon has led a number of Asian educators to take stock of the situation and introduce management innovations in higher education in their respective countries. These innovations have been as much a response to present needs as a deliberate effort supportive of the larger movement to indigenize bureaucratic and structural forms so that they would be more reflective of cultural and value patterns.

II

As those responsible for higher education set about to take on new dimensions and new challenges, a number of problematic obstacles present themselves. Very often, pressures to link up higher education more intimately with identified national development programs have not been accompanied with a corresponding availability of adequate additional resources. Thus universities find themselves in a position in which they are expected to do more, but have less to do it with. Inflation rates in Asia and the cost of education have moved past 20 per cent in several countries in the region. National budget allocation have not kept pace. Even tuition fees have not gone up corresponsibility, whether because of sheer inability of students to pay or because of legislation. For example, the Philippines froze tuition fees from 1972 to 1974 and since then has permitted a maximum tuition increase of 15 per cent.

Facing the situation of rising expectations and diminishing resources, those responsible for higher education have sought alternative models with greater internal efficiencies and immediately measurable outputs. Often they have not been able to afford the luxury of layering or accretion quite often used as a solution in U.S. universities during their affluent decade of the 60's, whereby they have been able to maintain traditional functions while creating new research or study centers through the application of added resources. In a developing country with scarce resources accretion is not always possible; restructuring to meet new needs often necessities a dismantling of structures that have carried out more traditional functions.

The results have often been a interesting as they were varied. As institutions struggle to comply with the demands of their situation, a diversity of re-

sponses has emerged, even within the same nation. Gradually, there has developed a mutual respect and recognition among institutions of radically different structures, roles, and sizes.

COMMON THREADS IN THE TRANSFORMATION PROCESS

There are however a few common threads discernible in the transformation process as it takes place from institution to institution.

There is in the first place a greater concern for accountability at both national and institutional levels. This brings with it the accompanying desire for specific educational management technologies that would in effect provide the accountability mechanisms and enable educational managers to build in internal efficiencies. We therefore see concern among Ministries of Education for iedntifying and predicting measurable outputs. Research and statistical divisions of these Ministries are increasingly linking manpower and human resource demands for government identified national development programs with projections on the outputs of higher education. Although this has in fact been the practice for quite a long time in such countries as Singapore and Korea with the use of their quota system, even countries which have had a traditional open market attitude towards higher education, such as the Philippines, have started to initiate the first steps towards a closer dovetailing of tertiary education output and professional manpower demand areas.

At the institutional level, an increasingly large number of universities are presently engaged in the soul searching exercise of mission statement formulation and good setting, based on an interpretation of society's needs. This exercise is then followed by the translation of these goals and objectives into viable and responsive programs within the realm of the institution's strengths and within the limits of its resources, providing for an integrated hierarchy of priorities that would include both newly created and traditional programs. To accomplish all these, university administrators have been quick to borrow and adopt management technologies used for some time within the corporate business sector. Among these are the use of the Planning Programming Budgeting System (PPBS) approach, the Management By Objectives (MBO) mechanisms, computer assisted Management Information Systems and participative decision making, all adopted not only to universities in general but to Asian universities in particular. On the last mentioned item, Japanese universities have traditionally been the foremost proponent where, as in Japanese corporate life, all decision making is by council and concensus and where in many universities the President himself is elected by a general vote that counts professors and maintenance staff on the same level.

The PPBS technique, for all its pitfalls or over-enthusiasm, overquantification and overdocumentation has proven valuable in such places as Korea and the Philippines, if only to force academicians to articulate desired objectives and to identify the resources which have to be marshalled in order to achieve these objectives. Such budgetary mechanisms provide concrete ways in which a university's performance can be more clearly directed to specific goals.

Perhaps more fundamental than budgetary mechanisms is the realignment of human resources within an institution to enable it to address a new set of objectives. It is only when the realignment of human resources takes place concomitantly with the reallocation of financial resources that a new pattern of organization can emerge. Such a reorganization however, although theoretically called for by the nature of most issues requiring attention, is nevertheless not without problems. As noted by the following commentary on the matter in a monogram published by the Institute of Institutional Education.

"Faculty members in Asian universitives, no less than those in Western universities, tend to be organized according to traditional academic disciplines. They have strong allegiances to their peers and to the body of knowledge organized around their particular disciplines. In attempting to recast the university so as to have it respond to society's problems, very few of which are undisciplinary, there is a need for fundamental faculty reorientation. Partially successful attempts have been made in the United States (e.g., the University of Wisconsin at Green Bay and Evergreen College in Washington) to organize faculties around problem areas and themes rather than around traditional disciplines. In East Asia, such institutions as Tunghai University in Taiwan and the new campus of Philippine Christian College in the Philippines have likewise approached campus planning with a thematic perspective. Because departure from traditional structures according to disciplines is a recent innovation, however, it presents its own difficulties. Academic credibility has to be earned. Also, faculty members with the intellectual and resource flexibility to detach themselves from the moorings of their disciplines are hard to come by. This is even truer in those Asian universities patterned after the European model (e.g., the Indonesian universities modeled after Dutch prototypes, which consist of a loosely federated group of faculties with a traditionally defined discipline as the focus of organization)."

The resultant matrix organization which results from a compromise between a total reorganization and the traditionally existing one also presents its own problems of conflict of loyalty and possible diffusion of focus. Even where a matrix organization is not in fact proposed, the inevitable problems of centralized authority and accountability have to be faced by faculties that used to enjoy a high degree of autonomy.

A parallel common thread that runs through the changing patterns in managing higher education is the emergence and greater utilization of professionally prepared administrators. The turnover rate of administrators in universities has never been higher and gone are the days when the dean-for-life phenomenon was not unusual. The needs of managing the higher education system that is in the midst of rapid change requires a different breed of manager.

As is often still the case in the West, higher education systems in Asia are often managed by the administrators who have risen from the ranks of the teacher-scholar. Their formal training and preparation are in disciplines quite other than educational management. These administrators find them-

selves in need of a set of skills substantially different from those that distinguished them in the classroom, the library, or the research laboratory.

As pressures for accountability and reorganization mount, the move to professionalize the management of higher education has, in spite of resistance to change, gained ground. In those instances where the established leaders find it impractical to change their own styles, they have chosen to train a second generation of education technocrats initially in staff positions. In some cases, this solution has met with significant success. Thus the pattern of management that has evolved in several Asian universities consists of a traditional executive leadership, where the autocrat, the senior academic, or the elder statesman is the model, buttressed by a second level of professionally trained junior administrators who provide information support for policy formulation.

In any case, however, the transplanting and adoption of basically foreign educational management technologies present their own problems. The first is attitudinal, insofar as many Asian countries are mistrustful of imported technologies, a mistrust arising in some instances from the ferment of nationalism and anticolonialism. This situation occasionally brings about an interesting polarization of allegiance within a campus under conditions in which nationalist sentiments are most acutely felt among both students and faculty, and in which a number of faculty members and administrators have received formal professional training in a Western setting. Recent tensions of nationalism in Malaysian and Indian universities which have had many of their staff educated abroad illustrate this point.

Even when the initial attitudinal obstacle is not present, there remains the much more real consideration of the basically different cultural and value systems underpinning borrowed technologies. For example, the whole set of premises underlying the MBO (Management by Objectives) approach is not always immediately apparent in a culture where paternalism and veneration for authority tend to be ingrained in the country's tradition. Another example is the use of peer judgment, individual evaluation, promotions boards, and rank and tenure boards, which has produced problems not typically found in a Western context. Then, too, such quantitative technologies as enrollment projection formulae, PPBS, and similar tools are premised on an attitude of precision respect for quantitative data, and open access to information not always easy to find in Asian settings.

This is not to say that such technologies cannot be sufficiently adapted to benefit Asian universities. Several universities have been significantly assisted by use of such Western educational tools. After all, many of these institutions were originally patterned and structured after Western prototypes, whether after an American model, as in the case of the Philippines; a European model, as in India or Hongkong; or on a transitional model, as in Malaysia.

Difficulties of implementation tend to arise when possible differences in cultural underpinnings are not sufficiently recognized or when the en-

thusiasm of the bearer of the technology leads to an "overkill" situation, the imposition of more technology than the institution is ready for. This situation is one not unknown to Western universities, especially the smaller ones. Their fascination with computers and computer-based information systems and data banks has sometimes led to a counterproductive resource expenditure beyond the university's level of need: the syndrome of spending a dollar to account for the spending of a dime.

Perhaps a third common thread is the growing interpedendence and respect among traditionally indifferent sub-sectors of the higher education system within the same country. It is paradoxically as a result of a greater diversity of institutions and patterns of organization responding to similar needs, that a realization of a more fundamental unity among these organizations has been born. Thus, in countries where premier state or high-tuition institutions have traditionally looked down upon larger, low-tuition provincial-based institutions, there is now a healthy recognition of each other's strengths and limitations and the need to serve respectively different socio-economic sectors of the client student base.

Also, a somewhat slow but already growing recognition of the role of private education is taking place. This achieves its most concrete form in government subsidy to private universities, whether indirectly through student scholarships and research grants, such as in Thailand, or more directly through underwriting a significant percentage of the university's operating costs such as India or Japan. In countries like the Philippines where no such assistance is yet available, the initial mechanisms are already being designed.

The sectarian or church-affiliated institutions whose academic stature have not always been recognized are now within the mainstream of higher education in many Asian countries. The classic example is the incorporation of the Christian oriented Chung Chi College into the State Chinese University of Hongkong, with full government support. For their part, while maintaining their sectarian character, many of these schools have been prompted by their country's growing self-consciousness to nationalize ownership and to secularize administration and control. Thus, for example, the ownership and management of the prestigious Maryknoll College in the Philippines has moved from the American missionary sisters to a lay Filipino board of professionals from different fields.

III

Among the most interesting specific issues facing those responsible for higher education in Asia is that of democratizing access to higher education. The demands before the end of the millenium for an educated and professional leadership for a population that will double and an employment base that will soon triple are vast indeed. Thus even in countries like Japan, the Philippines and Korea, which claim to have among the highest college student populations in the world, the number of students enrolling for higher education is willy nilly going to increase. Even when attempts have been made to establish ceilings or quality controls to access, numbers have nevertheless risen. In

the Philippines inspite of the National College Entrance Examination admitting only 70% of those interested in four-year courses, the number of entering college freshmen has nevertheless gone up in the last four years by over 40% from approximately 237,000 qualified in 1973 to almost 350,000 in 1977.

The problem identified among countries such as the Philippines is not the excess of college graduates in absolute numbers but rather their inadequate preparation, or more adequately, the misfit between their preparation and the country's needs, giving rise to the phenomenon of large numbers of educated unemployed.

Quite apart from the issue of sheer growing numbers, those concerned over democratizing access to higher education recognize that not only the numbers but also the mix of those going to higher eudcation needs closer scrutiny. Very often higher education becomes the enclave of the power elite, the urban-bred, the affluent, the ethnically privileged and the male. The growing concern among national governments for social equity and a more widespread distribution of wealth, power and education have generated specific policy measures and management innovations in Asian higher education.

The consciousness of access according to ethnic categories has first been translated into institutional policies in Malaysia where the University of Malaya and others have specific quotas for ethnic groups and where the Mara Institute of Technology was established specifically to provide higher education to bumiputras. There is a growing concern among countries like Thailand and the Philippines to bring more firmly into the mainstream of national education private institutions serving an entirely ethnic minority base. On the other hand, where integration of these minorities has come prominently into focus, such as Moslem Mindanao in the Philippines, those responsible for higher education have taken greater pains to ensure their easier access to the state higher education system.

Among the common major themes of national development in Asian countries is that of the development of the rural sector. Perhaps with the exception of Singapore and Hongkong, the rest of Asia looks more to the large rural base than to its already congested urban centers for its more substantial growth patterns. Interestingly, the larger and more populated countries tend to have the larger rural percentages and, although rich in resources, also have the farthest way to go in development and industrialization. Thus in Indonesia, congested in Java with two-thirds of the population on 7% of the land area, there is a huge rural population and a tremendous backlog of development.

Because of all these educators realize that higher education must not only reach more individuals but must also reach them in the countryside. In the Philippines, the Governor of Metro Manila area, Mrs. Imelda R. Marcos, has placed a moratorium on added higher education programs in the capital in an effort to disperse geographically access to higher education. In Thai-

land, the well-known "open" Ramkhamhaeng University represents an effort to reach out to a larger number of students, even to those who find it unfeasible to be physically present to attend classes on a regular basis. Ramkhamhaeng, characterized by exemption from the requirement of an 80% attendance record for graduation and by admission without recourse to an entrance examination, immediately attracted a mass base making it, since its foundation in 1971, the largest government university, with over 37,000 registrants. Today it has more than doubled and its first graduates who have survived the very high attrition rates have become productive citizens in Thai society. Other attempts have been made in both formal and non-formal education to bring the classroom to the students. Mass media has been used experimentally; correspondence courses have flourished; the use of radio has been employed in the University of the Air in Mindanao and other places; and television and video tape recorder technology has enabled television sets to convey professional courses even in such specialized fields as preventive medicine, as is the case in the Village Health Program of the Pahlavi University Medical School in Iran.

Also, there is the concern for access to higher education from all economic classes, whether urban or rural. In most instances where the cost of higher education cannot be any lower and where public and private institutions join hands in filling the need for educated manpower, the alternative of scholarships seems to be the answer. Not only in Asia but elsewhere, the practice of awarding scholarships according to intellectual superiority and prior academic achievement is fast being replaced by the practice of funding assistance according to economic need. While this is a welcome step towards achieving the political desideratum of social mobility, it is nevertheless premised on the assumption that the less advantaged or the disadvantaged will be sufficiently prepared academically to meet the admission and retention standards of the university in the first place. The premise of course bears closer scrutiny since academic readiness and socio-economic status are invariably related; those whose families earn more and who are thereby exposed to urban amenities stand much greater chances of admission and success in test than those with less exposure to media, print, and so on, due to more limited income or geographic remoteness.

Finally, there is the issue of access to higher education without regard to age or sex. Roughly 30% of students in Asian universities are women ranging from a high of 55% in the Philippines to a low of 15% in Pakistan. National cultural patterns on the access of women to professional and leadership positions find a reflection in the numbers going for higher education. There is much said both for and against providing higher education to women who are likely to be limited in the exercise of their professional contributions by responsibilities in the home. Nevertheless, the trend seems to indicate an increasing number of women students in most countries.

A dimension of access to higher education is making it available even to those who are beyond the typical emerging adult age traditionally served by universities. The entire arena of adult education and university outreach programs is one in which a number of interesting experiments with a distinc-

tively Asian character have met with significant success, among which, as UNESCO research has pointed out, are those in Thailand and Indonesia.

IV

A number of innovations in the management of higher education have been generated in response to the desire for a closer linkage between the life of the university and the life of the country in which it is located. These are found specifically in the management and evolution of academic programs.

In Korea, for example, the pilot school project has permitted a number of leading universities to equip their students with more than one field of study through a major-minor or double major curricular tract. Inter-disciplinary degree programs based on themes or problem areas rather than academic subjects have been springing up. Indigenous culture research has never been stronger and there are academic pillars in this field in several universities. Thus you have the Institute of Chinese Studies at the Chinese University of Hongkong, the Institute of Philippine Culture at Ateneo de Manila University, and similar centers for Korean, Islamic, Japanese and Southeast Asian studies.

The nationalistic concern for the use of indigenous language has meant fundamental changes in countries that have traditionally used the colonizer's mother tongue in formal education. The Chinese Colleges' Joint Council, later to become the Chinese University of Hongkong, was precisely an expression of this desire in the face of a predominantly English speaking government university, although factors other than medium of instruction were obviously at play. The Philippines, one of the last few countries that still uses English as a medium of instruction in all higher education institutions, has just officially adopted a bilingualism policy, although it will take almost a generation before Pilipino is as widely used in college as English. The concern is over the transition period, during which there will be an adequate mastery of neither language and the disadvantage of a gap between the content of higher education and the inability of the local language, especially in written form, to keep up in its adequacy of transmitting this content. In Indonesia, the lack of adequate textbooks, periodicals, and reference materials in the language is symptomatic of this, where the language is much more developed in its oral form than in its written form.

Another area in which many educators hope for an innovation is in the administration of national examination systems in those countries which apply them. The fear is expressed that passing the examinations becomes the overriding concern of all education prior to that hurdle and the pedagogy and content become inordinately geared towards emphasizing rote memory rather than analytical thinking or creativity, and individual competition rather than cooperation and interaction. Dean Sprenger of Eu Jen University paints a rather bleak picture of its effect in Taiwan:

"Everybody in this country knows that the Joint College Entrance Examination is the most important, the most decisive event in the life of young people. Already at the grade school level educational policy in the family, in

the school is determined by an upward glance towards the still distant College Entrance Examination. Since in the minds of parents, teachers, principles and consequently students this examination is the only thing that really counts in the long run, all efforts are concentrated on this goal, the many other aspects of education are gradually discarded. If our examinations are turned into abstract systems with only so called objective tests, then their influence on the whole educational system will be disastrous for the simple reason that all teaching and learning will be geared towards these abstract, non-educational goals.

"Students who fail in the Joint College Entrance Examination, — they will always be in the majority! — are automatically characterized as second rate citizens. What have they learned so far, and how are they to establish themselves in society? It might be extremely informative to study thoroughly how the great unrest among our young people and the rising crime wave relates to educational failure and the resulting feeling of despair of so many students. For those privileged students who pass the examinations academic life may turn out to be a painful experience and a heavy burden. But this has been discussed already in greater detail.

"We should like to refer especially to the psychological and social sickness caused by the Joint College Entrance Examinations: the relentless struggle to come always out on top pits students against students, teachers against teachers, schools against schools; makes students, teachers and parents blind for social and moral, i.e. the true educational goals; creates selfish, anti-social feelings in the young and isolates them psychologically. Everyone who is concerned about the future of our young will be shocked once he begins to assess realistically how much they are harmed physically and morally through our deadening examination system. A sound Chinese Society can hardly be envisioned without removal of this cancerous growth poisoning our present educational system."

V

If today is the era of nationalism, tomorrow may well be the era of transnational regionalism. Already we see such developments as the strengthening of the ASEAN community and the swinging of trade flows more and more internally oriented towards Asia rather outwards to the West. Following this healthy trend a number of innovations have taken place in the form of regional associations, projects sponsored by these, and consortia and mergers of different sorts. The Regional Institute of Higher Education & Development represents this kind of cooperation at the ministry level, and a number of non-governmental regional associations such as Association of Southeast Asian Institution of Higher Learning and Association of Christian Universities and Colleges in Asia further witness to this concern for regional linkages. The faculty and students exchange projects which they have launched, as well as joint research programs and workshops, provide avenues for discovering commonalities and establishing firmer bonds.

At a more intense level of communication there have emerged in the past decade a number of institutions belonging to and serving not one country in

particular but to the region in general. These institutions are often composed of a multinational board of governors or trustees with funding, faculty, and student body from a variety of countries and with focus on problems and areas of particular relevance to Asia in general. Thus you have the Asian Institute of Technology in Thailand, the Southeast Asian Research Council in Agriculture in the Philippines, the Regional English Language Center in Singapore, the Asian Institute of Management in Manila, and the AUR Vegetable Center in Taiwan. Even in national universities there is a healthy tendency to develop areas of expertise to a point where they become expertise centers in these fields for the rest of Asia. Frequent interaction among graduate schools in Asia, such as that sponsored by RIHED in December of 1976, are begining to identify complementarities so that eventually different national universities can be identified as Asian experts in different academic disciplines.

VI

As a developing Asia faces the challenges for tomorrow, its ultimate success or failure in achieving the goals it has set up for itself will depend upon the extent to which it is able to develop its resources. Each country in Asia will have to muster its national energy into the full utilization and development of its capital, natural and human resources. Of these, it is obvious that human resources will play the most vital role, and it is in the context of developing this human resource that higher education in these countries must find its meaning. Only if higher education can take stock of itself and courageously strike out in new directions and with innovation will it be able to grapple with the challenges facing Asia and make a fundamental impact. Given the stirrings and pioneering thrusts of higher education evident among universities in Asia today however, it is not at all unrealistic to hope that higher education can and will prove more than equal to the challenges ahead.